

REMARKS

Claims 17-32 are pending in this application. By this Amendment, Claims 27 and 28 are amended and the specification is amended. Reconsideration based on the amendments and remarks is respectfully requested. Applicants thank Examiner Shechtman for courtesies extended during the personal interview.

I. Claims Rejections under 35 U.S.C. §112

The Office Action rejects claims 27 and 28 under 35 USC § 112, second paragraph. The Office Action asserts that there is insufficient antecedent basis for the feature "said objective works" recited at line 5 of both claim 27 and claim 28. This rejection is respectfully traversed in light of the amendments to claims 27 and 28.

II. Claim Rejections under 35 U.S.C. §103

The Office Action rejects claims 17-22, 25-28, 31, 32 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,093,794 to Howie et al. in view of U.S. Patent No. 6,459,946 (Villanova et al.) The Office Action also rejects claims 23, 24, 29, and 30 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,093,794 (Howie) in view of Villanova and further in view of U.S. Patent No. 6,417,760 (Mabuchi et al.). These rejections are respectfully traversed.

The Office Action asserts that Howie teaches all of the features of independent claims 17 and 31 except a plurality of substrate-related-operation performing machines each which performs the substrate-related-operation related to a circuit substrate. However, Applicants respectfully submit that claim 17 of the present application relates to a managing apparatus for assigning an assisting-work to an appropriate one of a plurality of workers, whereas Howie relates to a scheduling system for scheduling 'primitive actions' to be carried out by resources. Howie recites as examples of the above-indicated primitive actions, "to mount a

fixture or drill a hole" at column 18, line 48. Applicants submit that the exemplary actions "to mount a fixture or drill a hole" do not correspond to the assisting work, recited in claims 17, comprising "at least one of (a) of supplying work to supply material or a part that is consumed or worn during the substrate-related-operation, and (b) a recovering work to remove the cause of failure at least one of the substrate-related-operation performing machine". As recited in paragraph 10 of the present specification, an assisting work is carried out by a worker to assist a substrate-related-operation performing machine.

Additionally, claim 17 recites that the assisting work is carried out, as needed, when the substrate-related-operation performing system is operating, and that the managing apparatus assigns, each time a need to carry out the assisting works occurs, the assisting work to one of a plurality of workers. That is, a need to carry out an assisting worker per spontaneously or occasionally as the operation-related performing system progresses. Each of the above-indicated two sorts of assisting workers, i.e., (a) the supplying work and (b) the recovering work, need to be carried out quickly.

Moreover, claim 17 recites that the assisting-worker current information obtaining portion obtains, from the substrate-related -operation performing machines, assisting-work occurrence information that is related to a occurrence of a need to carry out at least one assisting-work and represents an object and a sort of said at least one assisting-work and a time to carried out said at least one assisting-work. Thus, a need to carry out an assisting-work occurs only after the operation of the substrate-related-operation performing system is started, and the assisting-work occurrence information is obtained on a real-time basis. Howie does not teach or suggest carrying out any primitive actions corresponding to the assisting work recited in claim 17.

Regarding (a) the supplying work recited as one example of the assisting-work in claim 17, the Office Action refers to column 5, lines 59-68 of Howie that reads as follows:

The works order manager (see Figure 1) has the task of arranging for the scheduling of a work order, which is a series of tasks to be performed on a part or on a set of parts. Often, a project or piece of equipment will require a number of parts that are related in that they must all be finished before the system can be assembled. However, (a) the supplying work recited in claim 17 does not mean preparing a part or a set of parts in some place in a shop, but means replenishing a part or parts to a substrate-related-operation performing machine. Thus, (a) the supplying work or works cannot be scheduled on a long-time basis, but occurs spontaneously or occasionally as the operation of the substrate-related-operation performing system progresses and, each time a need to carry out (a) supplying work occurs, the works needs to be carried out quickly. Howie does not teach or suggest assigning (a) the supplying work to an appropriate one of a plurality of workers.

Regarding (b) the recovering work recited as another example of the assisting-work in claim 17, the Examiner refers to column 7, lines 6-12 of Howie that reads as follows: when an operational event (also referred to as a shop event), such as a machine breakdown, sick machinist, etc. occurs, there are potentially hundreds of operations affected. The master scheduler (see Fig. 1) must direct work orders from the conflict set back into CSS (Cooperative Scheduling System, see column 2, lines 8-9) for automatic rescheduling or bring them to the attention of the shop manager. Thus, we observe that when a machine breaks down, the work orders are automatically rescheduled without taking the broken-down machine into account, or are just brought to the "attention" of the shop manager. However, unlike claim 17, Howie fails to teach or suggest assigning (b) the recovering work to an appropriate one of a plurality of workers, so that the appropriate worker may recover the broken-down machine. Howie also fails to teach or suggest obtaining, from substrate-related-operation performing machines, assisting-work occurrence information that represents as

object and a sort of an assisting work (i.e., (b) the recovering work) and a time to carry out the assisting-work.

Applicants respectfully submit that (1) the assisting-work is carried out, as needed, when the substrate-related-operation performing system is operated; (2) and the assisting-work occurrence information obtaining portion obtains, from the substrate-related-operation performing machines, the assisting-work occurrence information. The first feature indicated that a need to carry out an assisting-work spontaneously occurs when the substrate-related-operation performing system is operated, and the second feature indicates that assisting-work occurrence information is obtained on a real-time basis during the operation of the substrate-related-operation performing system. The Office Action does not refer to any specific portions of Howie's patent that might teach or suggest those features. Thus, Howie does not teach the presently claimed combination of features.

Withdrawal of the rejection is respectfully requested.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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